PROVISIONAL SUNSPOT RELATIVE NUMBERS FOR MAY 1938

[Dependent alone on observations at Zurich and its station at Arosa]

[Data furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich Switzerland]

May 1938	Relative numbers	May 1938	Relative numbers	May 1938	Relative numbers
1	*Ec* 115	11	149	21	----------
2	134	12	*ad* 143	22	*a* ——
3	*EWaaacc* 160	13	151	23	*b*? 119
4	*aad* ——	14	*ad* 135	24	*Maac* 172
5	123	15	*a* 131	25	161
6	*a* 138	16	105	26	*Mc* 152
7	*d* 136	17	*Eac* 91	27	126
8	*EMccd* 153	18	*ad* 87	28	----------
9	*d* 156	19	95	29	*EMcc* 104
10	*bd* 151	20	*Eac* ——	30	89?
				31	*Eacd* 91

Mean, 26 days = 129.5.

Middle, large bright chromospheric eruption in central zone in May 24, observed at $16^h\ 05^m$ to $16^h\ 15^m$, C. G. T.

a = Passage of an average-size group through the central meridian.

b = Passage of a large group or spot through the central meridian.

c = New formation of a group developing into a middle-sized or large center of activity: E, on the eastern part of the sun's disk; W, on the western part; M, in the central circle zone.

d = Entrance of a large or average-sized center of activity on the east limb.

AEROLOGICAL OBSERVATIONS

[Aerological Division, D. M. LITTLE In Charge]

By B. FRANCIS DASHIELL

The mean free-air data, given in table 1, based on 842 airplane and radiometeorograph observations made during the month of May 1938, includes the basic meteorological elements of barometric pressure (P), temperature (T), and relative humidity (RH), all recorded at certain geometric heights.

These "means," computed by the customary method of differences, are omitted when less than 15 observations have been made at the surface and less than 5 at a standard height. However, at those standard heights lying within the limits comprising the monthly vertical range of the tropopause, 15 or more observations are required. For further details, see "Aerological Observations", in the January 1938, MONTHLY WEATHER REVIEW.

Reference to chart I shows that departures of the mean *surface* temperature above normal during May 1938 were moderate, reaching 4° (F) over the northwestern and southeastern coastal regions, particularly western Washington and eastern Georgia. Elsewhere temperatures remained close to normal, being somewhat above throughout the southern States, entire Mississippi Valley and Pacific coast, and slightly subnormal in the northern Plains and Rocky Mountain States, the Ohio Valley and north Atlantic States.

The highest mean free-air temperatures for the month occurred over Maxwell Field, Ala., and Pensacola, Fla., at 0.5 and 1 kilometer; over El Paso, Tex., at 1.5 and 2 kilometers; over El Paso and Kelly Field, Tex., at 2.5 and 3 kilometers; over Kelly Field at 4 kilometers; and over Kelly Field and Pensacola, Fla., at 5 kilometers. The highest mean free-air temperature (20.8° C.) occurred over Maxwell Field, Ala., at 0.5 kilometer, while the lowest of the month was −15.7° C. over Lakehurst, N. J., at 5 kilometers. Elsewhere, the lowest temperatures for the month were recorded over Boston, Mass., at all levels, being equally over only Lakehurst, N. J., at 4 kilometers, and exceeded at 5 kilometers. Low temperatures also occurred over Sault Ste. Marie, Mich., at all levels, and at 3 and 4 kilometers along a belt extending across the northern tier of states. Billings, Mont., was colder at 4 and 5 kilometers (−14.7° C. at 5 kilometers) than any other station in this belt west of Boston, Mass., to the Pacific coast.

Mean free-air temperatures for May were seasonally higher in every case than during April. However, over Pensacola, Fla., at 4 kilometers, the temperature equaled that observed the preceding month, and at Boston, Mass., at 2 kilometers, and Lakehurst, N. J., at 2.5 kilometers, the mean was very little higher during May. The rest of the country was warmer than in April; this being outstanding at all levels over Sault Ste. Marie, Mich., and to a less marked degree over Fargo, N. Dak., and at 0.5, 1, 1.5, 2, 2.5, and 3 kilometers over Barksdale Field, La., and Maxwell Field, Ala. The greatest difference in May over April was noted at Sault Ste. Marie, Mich., at 1.5 kilometers (8.2° C.); over Fargo, N. Dak., at 0.5 kilometer (6.0° C.); over Barksdale Field, La., and Maxwell Field, Ala., at 1 kilometer (5.1° C. and 6.3° C., respectively). Smaller excesses occurred over Spokane, Wash., and Chicago, Ill., but at greater heights.

Isobaric charts, prepared from the mean barometric pressure in millibars, as shown in table 1, indicate that a statistical center of low pressure existed during the month over New England, having moved eastward from the position it occupied during April. Boston, Mass., showed the lowest mean pressure. But the area extended westward sufficiently to include Sault Ste. Marie, Mich., and Fargo, N. Dak., at all levels above 2 kilometers. A tendency toward low pressure existed also over the Pacific Northwest (Seattle, Wash.) at 0.5, 1, 1.5, and 2 kilometers. The